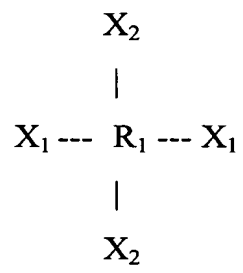
IN THE CLAIMS:

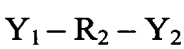
1.-6. (Cancelled)

7. (Previously Presented) The method for forming a semiconductor device film of Claim 18, wherein the first organic molecules are represented by



(where R_1 is a first organic skeleton, X_1 is a first set of functional groups, and X_2 is a second set of functional groups, X_1 and X_2 being same or different in type),

the second organic molecules are represented by



(where R_2 is a second organic skeleton, Y_1 is a third set of functional groups, and Y_2 is a fourth set of functional groups, Y_1 and Y_2 being same or different. in type),), and

wherein, during polymerization, the three-dimensionally polymerized organic polymer is formed by binding the first set of functional groups (X_1) and the third set of functional groups (Y_1) together and binding the second set of functional groups (X_2) and the fourth set of functional groups (Y_2) together, and

the molecular level pores are formed in regions surrounded by the first organic skeletons (R_1) and the second organic skeletons (R_2).

8. (Previously Presented) The method for forming a semiconductor device of Claim 18,

wherein the first organic molecules are represented by

$$\begin{array}{l} X_1 \\ | \\ Z\text{---}\ R_1\ \text{---}\ X_2 \\ | \\ X_1 \end{array}$$

(where R_1 is a first organic skeleton, X_1 is a first set of functional groups, X_2 is a second set of functional groups, and Z is a third set of functional groups, X_1 and X_2 being same or different in type),

the second organic molecules are represented by

$$Y_1 - R_2 - Y_2$$

(where R_2 is a second organic skeleton, Y_1 is a fourth set of functional groups, and Y_2 is a fifth set of functional groups, Y_1 and Y_2 being same or different in type), and

wherein, during polymerization, the three-dimensionally polymerized organic polymer is formed by binding the first set of functional groups (X_1) and the fourth set of functional groups (Y_1) together and binding the second set of functional groups (X_2) and the fifth set of functional groups (Y_2) together to form a plurality of units and then binding the third set of functional groups (Z) of the plurality of units together, and

the molecular level pores are formed in regions surrounded by the first organic skeletons (R_1) and the second organic skeletons (R_2) in the plurality of units.

9. (Previously Presented) The method for forming a semiconductor device of Claim 18, further comprising the steps of:

forming a surface barrier film on the interlayer dielectric film;

forming a mask on the surface barrier film;

forming a concave portion in the surface barrier film and the interlayer dielectric film by etching the surface barrier film and the interlayer dielectric film using the mask; and

forming an interconnection made of a metal material by filling the concave portion with the metal material.

10.-12. (Canceled)

13. (Previously Presented) The method for forming a semiconductor device of Claim 18, further comprising the steps of:

forming a mask on the interlayer dielectric film;

forming a concave portion in the interlayer dielectric film by etching the interlayer dielectric film using the mask;

forming a sidewall barrier film on sidewalls of the concave portion; and

forming an interconnection made of a metal material by filling the concave portion having the sidewall barrier film with the metal material.

14.-17. (Canceled)

18. (Currently Amended) A method for forming a semiconductor device, comprising the steps of:

polymerizing a plurality of first cross-linking molecules each having a three-dimensional structure and a plurality of second cross-linking molecules each having a two-dimensional structure to form an interlayer dielectric film composing a three-dimensionally polymerized organic polymer,

wherein each first cross-linking molecule comprises a first organic molecule having attached thereto three or more functional groups, and each second cross-linking molecule comprises a second organic molecule having attached thereto two sets of functional groups, and

wherein, during polymerizing, ~~each functional group of the first cross-linking molecules is bound to one functional group of a second cross-linking molecule and each function group of the second cross-linking molecules is bound to one functional~~

~~group of the first cross-linking molecule to form~~ a three-dimensional polymerized organic polymer structure having a plurality of molecular level pores is formed by forming a unit with a three-dimensional structure composed of a plurality of polygons having the first cross-linking molecules in each apex and the second cross-linking molecules on each side.

19. (Previously Presented) The method for forming a semiconductor device of Claim 18, wherein the three-dimensionally polymerized organic polymer has a unit with diamond structure.

20. (Previously Presented) A method for forming a semiconductor device, comprising the steps of:

polymerizing first cross-linking molecules having a three-dimensional structure and second cross-linking molecules having a two-dimensional structure to form an interlayer dielectric film composing a three-dimensionally polymerized organic polymer having a number of molecular level pores,

wherein the three-dimensionally polymerized organic polymer has a unit with diamond structure composed of three hexagons sharing two sides with one another.

21. (Previously Presented) The method for forming a semiconductor device of Claim 18, wherein the three-dimensionally polymerized organic polymer has a basket-like unit.

22. (Currently Amended) A method for forming a semiconductor device, comprising the steps of:

polymerizing a plurality of first cross-linking molecules each having a three-dimensional structure and a plurality of second cross-linking molecules each having a two-dimensional structure to form an interlayer dielectric film composing a three-dimensionally polymerized organic polymer having a number of molecular level

pores,

wherein the three-dimensionally polymerized organic polymer has a basket-like unit composed of ~~three~~ two hexagons sharing two ~~sides~~ apexes with one another.

23. (Currently Amended) A method for forming a semiconductor device, comprising the steps of:

polymerizing a plurality of first cross-linking molecules each having a three-dimensional structure a plurality of and second cross-linking molecules each having a two-dimensional structure to form an interlayer dielectric film composing a three-dimensionally polymerized organic polymer having a number of molecular level pores,

wherein the ~~first organic~~ plurality of first cross-linking molecules are adamantine derivatives, and the ~~second organic~~ plurality of second cross-linking molecules are benzene derivatives.

24. (Currently Amended) A method for forming a semiconductor device, comprising the steps of:

polymerizing a plurality of first cross-linking molecules each having a three-dimensional structure and a plurality of second cross-linking molecules each having a two-dimensional structure to form an interlayer dielectric film composing a three-dimensionally polymerized organic polymer having a number of molecular level pores,

wherein the ~~first organic~~ plurality of first cross-linking molecules are benzene derivatives, and the ~~second organic~~ plurality of second cross-linking molecules are phenanthrene derivatives.

25. (Currently Amended) A method for forming a semiconductor device, comprising the steps of:

polymerizing a plurality of first cross-linking molecules each having a three-

dimensional structure and a plurality of second cross-linking molecules each having a two-dimensional structure to form an interlayer dielectric film composing a three-dimensionally polymerized organic polymer having a number of molecular level pores;

wherein the three-dimensionally polymerized organic polymer has a unit with diamond structure composed of three polygons having the first cross-linking molecules in six apexes and sharing three apexes with one another.

26. (Currently Amended) A method for forming a semiconductor device, comprising the steps of:

polymerizing a plurality of first cross-linking molecules each having a three-dimensional structure and a plurality of second cross-linking molecules each having a two-dimensional structure to form an interlayer dielectric film composing a three-dimensionally polymerized organic polymer having a number of molecular level pores;

wherein the three-dimensionally polymerized organic polymer has a basket-like unit composed of two polygons having the first cross-linking molecules in six apexes and sharing two apexes with one another.

27. (New) A method for forming a semiconductor device, comprising the steps of:

polymerizing a plurality of first cross-linking molecules each having a three-dimensional structure and a plurality of second cross-linking molecules each having a two-dimensional structure to form an interlayer dielectric film composing a three-dimensionally polymerized organic polymer having a number of molecular level pores;

wherein the three-dimensionally polymerized organic polymer has a unit with a three-dimensional structure composed of a plurality of polygons having the first cross-linking molecules in each apex and the second cross-linking molecules on each side.

28. (New) A method for forming a semiconductor device, comprising the steps of :

polymerizing a plurality of first cross-linking molecules each having a three-dimensional structure and plurality of second cross-linking molecules each having a two-dimensional structure to form an interlayer dielectric film composing a three-dimensional polymerized organic polymer having a number of molecular level pores;

wherein the interlayer dielectric film is a porous organic polymer film.